

IN THE CLAIMS:

1-67 (cancelled).

68. (new) A dynamo-electric machine comprising:

a stator having a winding, and

a rotor having first and second field magnets, which have different, magnetic poles and which are arranged sequentially and alternately on a rotating shaft in a rotation direction, the first and second field magnets being opposed to the magnetic poles of said stator,

wherein said first and second field magnets displace in an axial or the rotation direction of the rotating shaft according to the magnetic action force of said first and second field magnets and the direction of the torque generated in said rotor.

69. (new) The dynamo-electric machine according to claim 68,

wherein the centers of the magnetic poles of said first and second field magnets are maintained in an alignment state when said rotor rotates in one direction or the other direction at a low speed,

wherein said second field magnet is displaced with respect to said first field magnet with said first field magnet maintained when said rotor rotates in one direction at a high speed, and the centers of the magnetic poles of said first and second field magnets are shifted from the alignment state, and

wherein said first field magnet is displaced with respect to said second field magnet with said second field magnet maintained when said rotor rotates

in the other direction at a high speed, and the centers of the magnetic poles of said first and second field magnets are shifted from the alignment state.

70. (new) The dynamo-electric machine according to claim 68, further comprising:

a mechanism that moves said first and second field magnets in an axial or the rotation direction of the rotating shaft according to the magnetic action force of said first and second field magnets and the direction of the torque generated in said rotor, and

a mechanism that controls the movement of said first and second field magnets.

71. (new) The dynamo-electric machine according to claim 70, wherein said movement mechanism is a screw mechanism comprising a nut mechanism installed in each of said first and second field magnets, and a bolt mechanism installed in said shaft, and

wherein said first and second field magnets mate with said shaft so that said first and second field magnets may freely move on said shaft.

72. (new) The dynamo-electric machine according to claim 70, wherein said movement control mechanism comprises a first control mechanism installed on said shaft between said first and second field magnets, a second control mechanism installed on the opposed side of said second field magnet with respect to said first field magnet, and a third control mechanism

installed on the opposed side of said first field magnet with respect to said second field magnet, and

wherein these control mechanisms can move along said shaft.

73. (new) A dynamo-electric machine comprising:

a stator having a winding, and

a rotor having first and second field magnets, which have different, magnetic poles and which are arranged sequentially and alternately on a rotating shaft in a rotation direction, the first and second field magnets being opposed to the magnetic poles of said stator,

wherein said first and second field magnets arranged at both ends of said third field magnet fixed on said shaft displace in an axial or the rotation direction of the rotating shaft according to the magnetic action force of said first and second field magnets and the direction of the torque generated in said rotor.

74. (new) The dynamo-electric machine according to claim 68,

wherein the centers of the magnetic poles of said first to third second field magnets are maintained in an alignment state when said rotor rotates in one direction or the other direction at a low speed,

wherein said second field magnet is displaced with respect to said third field magnet with the centers of the magnetic poles of said first and third field magnets maintained in an alignment state when said rotor rotates in one direction at a high speed, and the centers of the magnetic poles of said second

and third field magnets are shifted from the alignment state where the centers of the magnetic poles of said first to third field magnets are aligned, and

wherein said first field magnet is displaced with respect to said third field magnet with the centers of the magnetic poles of said second and third field magnets maintained in an alignment state when said rotor rotates in the other direction at a high speed, and the centers of the magnetic poles of said first and third field magnets are shifted from the alignment state where the centers of the magnetic poles of said first to third field magnets are aligned.

75. (new) The dynamo-electric machine according to claim 73, further comprising:

a mechanism that moves said first and second field magnets in an axial or the rotation direction of the rotating shaft according to the magnetic action force of said first to third field magnets and the direction of the torque generated in said rotor; and

a mechanism that controls the movement of said first and second field magnets.

76. (new) The dynamo-electric machine according to claim 75,

wherein said movement mechanism is a screw mechanism comprising a nut mechanism installed in each of said first and second field magnets, and a bolt mechanism installed in said shaft, and

wherein said first and second field magnets mate with said shaft so that said first and second field magnets may freely move on said shaft.

77. (new) The dynamo-electric machine according to claim 75,
wherein said movement control mechanism comprises one control
mechanism installed on the opposed side of said second field magnet with respect
to said first field magnet, and the other control mechanism installed on the
opposed side of said first field magnet with respect to said second field magnet,
and
wherein these control mechanisms can move along said shaft.

78. (new) The dynamo-electric machine according to claim 68,
wherein an electric current to that advanced angle is amended according
to the displacement of said first field magnet or the displacement of said second
field magnet is supplied to said winding.

79. (new) The dynamo-electric machine according to claim 73,
wherein an electric current to that advanced angle is amended according
to the displacement of said first field magnet or the displacement of said second
field magnet is supplied to said winding.

80. (new) The dynamo-electric machine according to claim 68,
wherein a support mechanism that guides the movement of said first and
second field magnets is installed between said first and second field magnets and
said shaft.

81. (new) The dynamo-electric machine according to claim 73,
wherein a support mechanism that guides the movement of said first and second field magnets is installed between said first and second field magnets and said shaft.

82. (new) The dynamo-electric machine according to claim 68,
wherein said first and second field magnets are installed on said shaft through the sleeve insulated magnetically and electrically said shaft.

83. (new) The dynamo-electric machine according to claim 73,
wherein said first and second field magnets are installed on said shaft through the sleeve insulated magnetically and electrically said shaft.

84. (new) The dynamo-electric machine according to claim 82,
wherein said sleeve is non-magnetic substance having higher electric resistance rate than iron.

85. (new) The dynamo-electric machine according to claim 72, further comprising:

springs to guide the movement of said first and second field magnets one of which is installed on the side of said second field magnet with respect to said first field magnet and the other is installed on the side of said first field magnet with respect to said second field magnet.

86. (new) The dynamo-electric machine according to claim 77, further comprising:

springs to guide the movement of said first and second field magnets one of which is installed on the side of said second field magnet with respect to said first field magnet and the other is installed on the side of said first field magnet with respect to said second field magnet.